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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/923,810	08/08/2001	Sok Joo Lee	8734.011.00- US	9929

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EXAMINER	
SEFER, AHMED N	

ART UNIT	PAPER NUMBER
2826	

MAIL DATE	DELIVERY MODE
07/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/923,810	LEE ET AL.	
	Examiner	Art Unit	
	A. Sefer	2826	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 April 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6 and 8-20* is/are pending in the application.

4a) Of the above claim(s) *8-14* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6 and 15-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11/29/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendment filed April 5, 2007 has been entered.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the conductive line recited in claim 1 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities: The recitation of claims 1 and 15 calling for, "**a heat generated** alloy layer on the surface of the first metal layer **by heat generated** by continuously depositing a second metal on the first metal" requires appropriate correction.

4. Claim 2 is objected to because of the following informalities: The recitation of claim 2 calling for, "the first metal of the gate conductive lines" should read "the first metal of the conductive line".

5. Claim 6 is objected to because of the following informalities: The recitation of claim 6 calling for, "said gate conductive line" should read "said conductive line".

6. Claim 16 is objected to because of the following informalities: The recitation of claim 16 calling for, "the second layer" should read "the alloy layer".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-6 are rejected under 35 U.S.C. 102(e) as being anticipated by Hong et al. ("Hong") US PG-Pub 2001/0019125.

Hong discloses in figs. 1-10 a liquid crystal display device, wherein a conductive line (24, 94) is in electrical contact with a transparent electrode 86 (figs. 2 and 9B) comprising a first metal layer 24 formed from a first metal (par. 84) formed on a substrate 10; and an alloy layer 94 formed on the surface of the first metal layer by depositing a second metal (par. 89) on the first metal layer, wherein the alloy layer 94 is directly connected to the transparent electrode 86.

Note although Hong teaches (par. 89) heat generated alloy layer, wherein the residual metal is removed, the recitation calling for, "a heat generated ... by heat generated by continuously depositing ... wherein a residual of the second metal is entirely removed" is not as relevant as the final product. See *SmithKline Beecham Corp. v. Apotex Corp.*, 78 USPQ2d 1097 (Fed. Cir, 2006). ("**While the process set forth in the product-by-process claim may be new, that novelty can only be captured by obtaining a process claim.**") Note that when "product by process" claiming is used to describe one or more limitations of a claimed product, the limitations so described are limitations of the claimed product per se, no matter how said product is actually made. In re Hirao, 190 USPQ 15 at 17 (footnote 3). See also In re Brown, 173 USPQ 685; In re Luck, 177 USPQ 523; In re Fessmann, 180 USPQ 324; In re Avery, 186 USPQ 161; In re Wertheim, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); and In re Marosi et al., 218 USPQ 289, all of which make it clear that it is the patentability of the final product per se which must be determined in a "product by process" claim and not the patentability of the process, and that an old or **obvious product produced by a new method is not patentable as a product**, whether claimed in "product by process" claims or not. Note that applicant has the burden of proof in such cases, as the above case law makes clear. See also MPEP 706.03(e).

Re claims 2 and 3, Hong discloses (fig. 5 and par. 84) the first metal of the conductive line including an aluminum-alloy having a thickness (par. 84) within the recited range (as recited in claim 3).

Regarding claim 4, Hong discloses heat generated alloy layer 94 being formed from an alloy including the first metal 24 and a second metal (par. 89) deposited onto the first metal layer, wherein the second metal is subsequently removed.

Regarding claim 5, Hong discloses the second metal includes one of molybdenum and chrome (par. 89)

Regarding claim 6, Hong discloses said conductive line includes one of a gate pad 24.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 15-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hong in view of Kubo JP 6-77482.

Hong discloses in figs. 1-10 a liquid crystal display device, comprising: a substrate 10; a gate electrode 40 disposed on the substrate; a gate pad (24, 94) disposed on the substrate; an insulating film 30 disposed on the gate electrode and the gate pad; an active layer 40 disposed on the insulating film above the gate electrode; an ohmic contact layer 50 disposed on portions of the active layer; a source electrode 65 and a drain electrode 66 disposed on the ohmic contact

layer; a passivation layer 70 disposed on the source and drain electrodes or disposed on the insulating layer **(as recited in claim 19)**, covering side surfaces of the source and drain electrodes **(as recited in claim 18)** or contacting a portion of the active layer between the source and drain electrodes **(as recited in claim 20)**; a pixel electrode 82 disposed on the passivation layer and contacting the drain electrode 66; and a transparent electrode 86 disposed on the passivation layer or disposed within a via 74 formed through the passivation layer and insulating film **(as recited in claim 17)** and contacting the gate pad, wherein the gate pad includes a first layer 24 formed of a first metal (par. 84) and a heat generated alloy layer 94 formed on the surface of the first layer and the heat generated alloy layer directly connected to the transparent electrode 86, but does not disclose the gate electrode including a first layer formed of a first metal and a heat generated alloy layer.

Kubo discloses (fig. 1 and pars. 16 and 17 of the machine translated document) a liquid crystal display device, comprising: a substrate 1; a gate electrode including a first layer 2 formed of a first metal and a heat generated alloy layer 17.

Therefore, in view of Kubo's teachings, one having an ordinary skill in the art at the time the invention was made would be motivated to modify Hong by incorporating gate electrode including a first layer formed of a first metal and a heat generated alloy layer. The motivation would have been to yield a device without a hillock as taught by Kubo (abstract).

Note that although Hong teaches (par. 89) heat generated alloy layer, wherein the residual metal is removed, the recitation calling for, "a heat generated ... by heat generated by continuously depositing ... wherein a residual of the second metal is entirely removed" is not as relevant as the final product. See *SmithKline Beecham Corp. v. Apotex Corp.*, 78 USPQ2d 1097

(Fed. Cir, 2006). ("**While the process set forth in the product-by-process claim may be new, that novelty can only be captured by obtaining a process claim.**") Note that when "product by process" claiming is used to describe one or more limitations of a claimed product, the limitations so described are limitations of the claimed product per se, no matter how said product is actually made. In re Hirao, 190 USPQ 15 at 17 (footnote 3). See also In re Brown, 173 USPQ 685; In re Luck, 177 USPQ 523; In re Fessmann, 180 USPQ 324; In re Avery, 186 USPQ 161; In re Wertheim, 191 USPQ 90 (209 USPQ 554 does not deal with this issue); and In re Marosi et al., 218 USPQ 289, all of which make it clear that it is the patentability of the final product per se which must be determined in a "product by process" claim and not the patentability of the process, and that an old or **obvious product produced by a new method is not patentable as a product**, whether claimed in "product by process" claims or not. Note that applicant has the burden of proof in such cases, as the above case law makes clear. See also MPEP 706.03(e).

Re claim 16, Hong discloses the transparent electrode 86 contacting the alloy layer 94 of the gate pad.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Sefer whose telephone number is (571) 272-1921.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sue Purvis can be reached on (571) 272-1236.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ANS
July 3, 2007

A. Sefer
Patent Examiner
Art Unit 2826